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EXAMINER

EHICHIOYA, FRED I

ART UNIT	PAPER NUMBER
2162	

DATE MAILED: 05/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/692,227

Applicant(s)

RAJAN ET AL.

Examiner

Fred I. Ehichioya

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 - 9, and 25 - 33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 9, and 25 - 33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This action is responsive to communications filed March 3, 2006.
2. Claims 1 – 9, and 25 - 33 are pending in this Office Action.

### *Response to Arguments/Remarks*

#### *Double Patenting*

3. Applicants' argument regarding double patenting rejection is persuasive.

Therefore, the rejection under double patenting of the last Office Action is hereby withdrawn.

4. Applicant argues:

**(a) *Bhattacharya simply does not teach or suggest the claimed features of the present invention. Nor does the Davidson reference cure the deficiencies of Bhattacharya (page 7, paragraphs 1 and 2).***

Examiner respectfully disagrees with the applicants. As stated in the last Office Action with respect to claims 1, 25 and contrary to applicants argument that Bhattacharya does not teach a user-defined type having a plurality of fields, Examiner respectfully disagrees with the applicants. Examiner wishes to remind the applicants that the combination of Bhattacharya and Davidson disclose applicants claimed invention.

Davidson discloses "user defined type" kept in the persistent store as an object instance of a type (column 1, lines 58 – 67) and Bhattacharya discloses storing the data

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in said at least one designated field of said plurality of fields of the instance of the user defined type as a file outside of the database store (page 501, left column, paragraph 1 "The storage model is the usage . . . which is stored in the database. Figure 1 clearly shows a Table with plurality of fields which store data and at least one of the fields stores data that is an instance of a file outside of the data base store as depicted by URL1 and URL2 of table 1; URL1 and URL2 reference objects stored in the external file system). The motivation to combine Davison with Bhattacharya is that the user-defined data type are safe and secured because they are stored externally from the database. In case of disaster or system failure, these data can easily be retrieved from the external data store.

***(b) Davidson do not teach or suggest the novel feature of "storing the data in . . . at least on designated field of a plurality of fields of an instance of a user defined type as a file outside of a database store" (Page 7, Para 2 – page 8, para 1 ).***

Examiner respectfully disagrees; Please refer to response to argument (a) above.

***(c) a prima facie case of obviousness has not been established (page 8, para 3).***

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in

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the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case and as shown in response to argument (a) above, the combination of Davidson and Bhattacharya clearly suggests applicants claimed invention. The motivation to combine Davison with Bhattacharya is that the user-defined data type are safe and secured because they are stored externally from the database. In case of disaster or system failure, these data can easily be retrieved from the external data store.

5. In view of the above, examiner contends that the rejection of the last Office Action is proper.

### **Claim Rejections - 35 USC § 103**

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1, 2, 9, 25, 26, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over NPL "Coordinating Backup/Recovery and Data Consistency Between Database and File Systems" issued to Bhattacharya et al (hereinafter "Bhattacharya") in view of U.S. Patent 6,785,690 issued to Thomas J. Davidson (hereinafter "Davidson").

Regarding claims 1 and 25, Bhattacharya teaches in a computer system in which an object that is an instance of a user defined type can be persisted in a database store (see Davidson column 1, lines 58 - 67), wherein a definition of the user defined type comprises a plurality of fields (see Davidson column 3, lines 13 - 17), each of said plurality of fields having a respective data type, at least one of said fields of the definition being designated as containing data of a type that is to be stored as a file outside of the database store separately from the other of said plurality of fields of the type definition (see Bhattacharya: page 501, left column, paragraph 1 "The storage model is the usage . . . , which is stored in the database. Figure 1 clearly shows a Table with plurality of fields which store data and at least one of the fields stores data that is an instance of a file outside of the data base store as depicted by URL1 and URL2 of table 1; URL1 and URL2 reference objects stored in the external file system), a method comprising:

storing the data in said at least one designated field of said plurality of fields of the instance of the user defined type as a file outside of the database store (see Bhattacharya: page 501, left column, paragraph 1 "The storage model is the usage . . . , which is stored in the database. Figure 1 clearly shows a Table with plurality of fields which store data and at least one of the fields stores data that is an instance of a file outside of the data base store as depicted by URL1 and URL2 of table 1; URL1 and URL2 reference objects stored in the external file system); and

storing the data in each of the other fields of said plurality of fields of the instance of the user defined type within the database store (Bhattacharya: page 501, Figure 1 shows table that "stores the data in each of the other fields of the instance of the object within the database store" and left column, paragraph 1 also states that ""metadata (relating to that object), are stored in the database).

Bhattacharya does not explicitly teach user defined type as claimed.

Davidson teaches receiving a request to store an object (column 4, lines 18 – 19) that is an instance of the user-defined type (column 3, lines 13 – 17).

It would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine teaching of the cited references because the combination of Davison with Bhattacharya creates secured and safe user-defined data types that are stored externally from the database. In case of disaster or system failure, these data can easily be retrieved from the external data store.

Regarding claims 2 and 26, Bhattacharya teaches providing a link between the data of the fields of the object that are stored within the database store and the data of the field that is stored as a file outside of the database store (column page 501, section 2 "The DATALINK column(s) in an SQL table contain the "pointer" to the file stored in a file server" Examiner interprets "file server" as "outside of the database store").

Regarding claims 9 and 33, Davidson teaches wherein the type of the object is defined as a class in managed code (see column 2, lines 53 – 57; Examiner interprets "implementation code" as "managed code").

8. Claims 3 - 8, and 27 - 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhattacharya in view Davidson and further in view of U.S. Patent 6,070,174 issued to Robert Phillip Starek et al (hereinafter "Starek").

Regarding claims 3 and 27, Bhattacharya or Davidson do not explicitly teach fragments as claimed.

Starek teaches wherein the data of the fields of the object that are stored within the database store are stored as fragments within a column of a table of the database, the column having been designated as the user defined type (see column 10, lines 29 - 51).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teaching of Starek with the teaching of Bhattacharya and Davidson to provide system with a method and apparatus for enhancement of file



system calls to a file structure of an operating system. The motivation is that the interception of file system calls such that supplemental file management processes can be performed in a manner transparent not only to the user but also to the operating system.

Regarding claims 4 and 28, Bhattacharya teaches wherein a unique identifier associated with the object is stored in another column of the table in a same row as the data of the fields of the object (page 503, right column paragraph 4 "This identifier is also stored in the DATALINK column by the DBMS").

Regarding claim 5, Starek teaches wherein the data in said at least one designated field of the object is stored as a file within a predetermined directory of a file system of a computer on which the database server is executing (see column 10, lines 14 – 18).

Regarding claims 6 and 30, Bhattacharya teaches providing access by an application to the file in which the data of said at least one field is stored outside the database store via the file system of the computer (page 502, left column, paragraph 1 "An application uses an SQL cal to query . . . The client application can the access the file(s) using the normal file system protocols").

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Regarding claims 7 and 31, Starek teaches wherein said step of providing access by an application to the file in which the data of said at least one field is stored comprises:

receiving a call from the application, via an application programming interface to the file system of the computer, to open the file, wherein the call identifies the field of the object by its identity within the database store (see column 7, lines 9 – 20);

determining from the identity of the field of the object within the database store a path within the file system of the computer to the file containing the data of that field of the object (see column 4, lines 23 – 32); and

executing the call to open the file using the determined path (see column 3, line 65 – column 4, line 6 and column 7, lines 16 – 21).

Regarding claims 8 and 32, Starek teaches wherein the file system of the computer comprises a Microsoft NTFS file system and wherein the application programming interface to the file system comprises the Win32 application programming interface (see column 9, lines 1 – 6).

Regarding claim 29, Starek teaches wherein the program code causes the computer to store the data in said at least one designated field of the object as a file within a predetermined directory of a file system of a computer on which the system is implemented (see column 14, lines 14 – 18).

***Conclusion***

9.. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred I. Ehichioya whose telephone number is 571-272-4034. The examiner can normally be reached on M - F 8:00 AM to 4:30 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene can be reached on 571-272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Fred I. Ehichioya  
Patent Examiner  
Art Unit 2162

May 18, 2006

  
SHAHID ALAM  
PRIMARY EXAMINER